



JÖNKÖPING UNIVERSITY

School of Engineering

SCALING WEB APPLICATIONS

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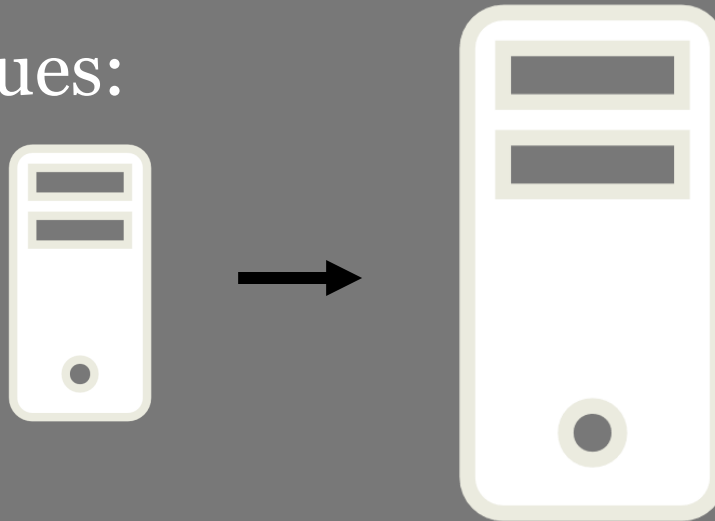
Spring 2019

SCALING WEB APPLICATIONS

Two well-known techniques:

- Vertical scaling

- Easy 😊
- Limited ☹️

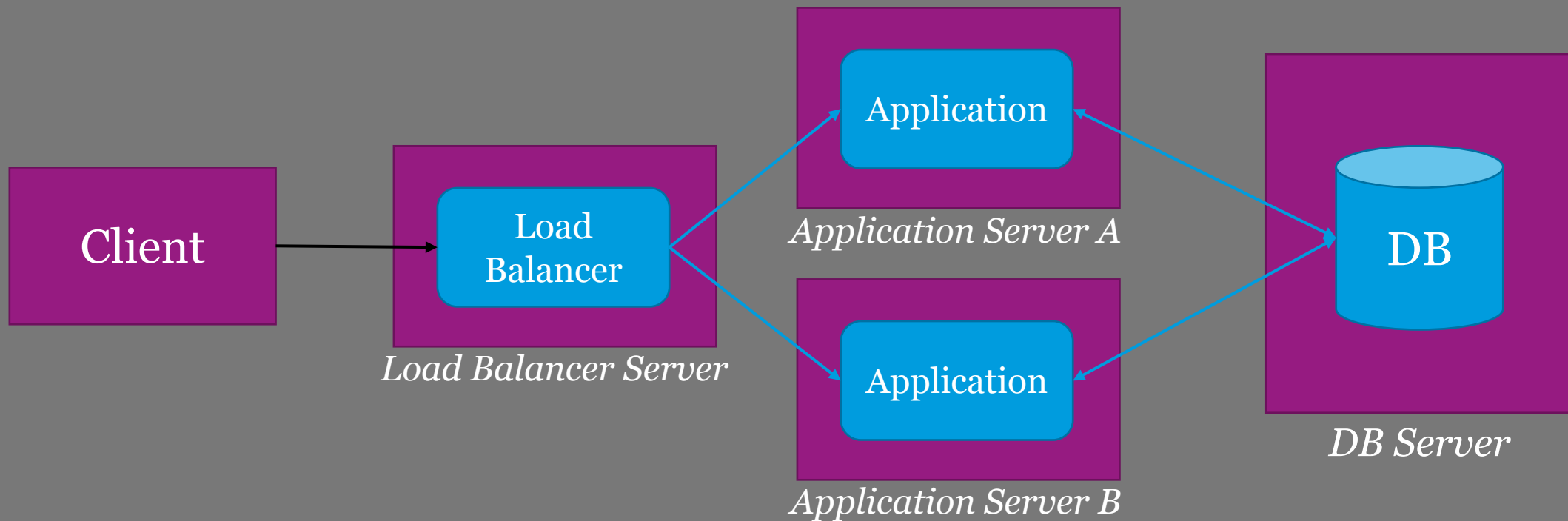


- Horizontal scaling

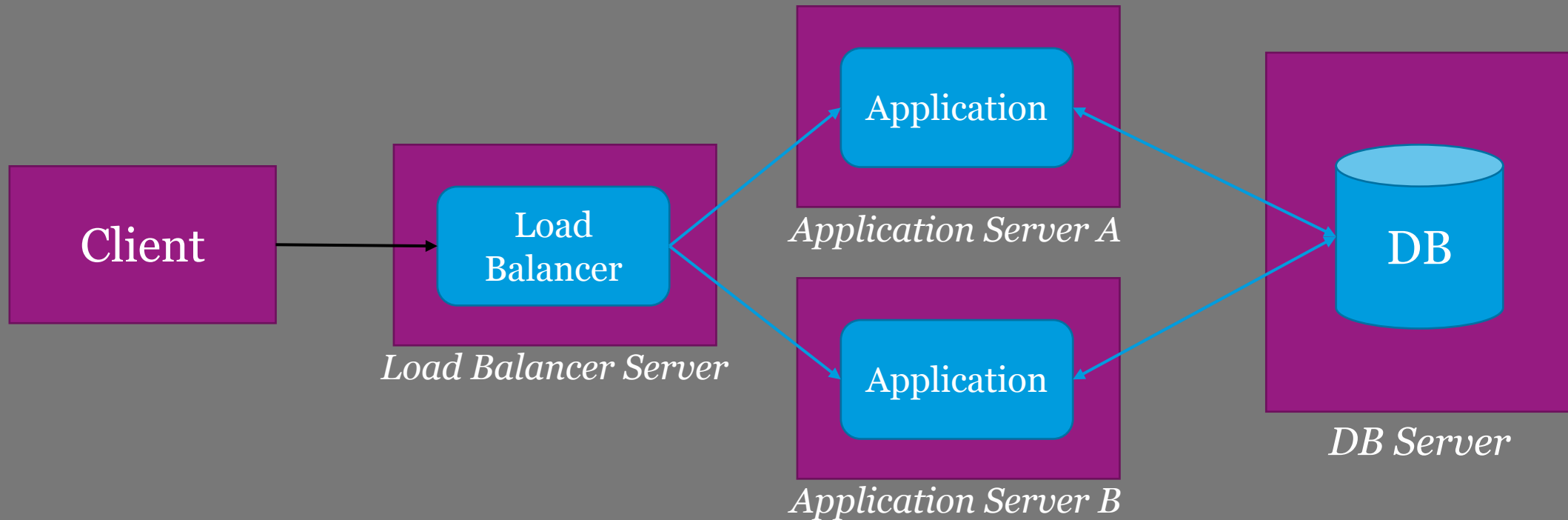
- "Unlimited" 😊
- Hard ☹️



HORIZONTAL SCALING WITH A LOAD BALANCER

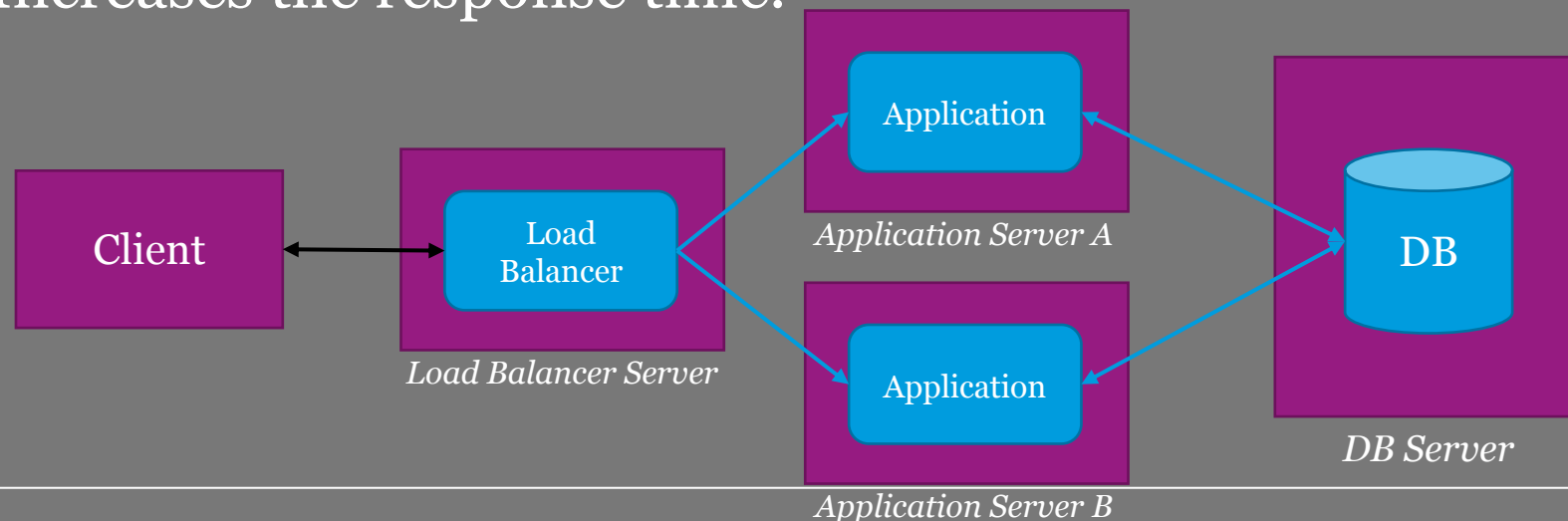


THE SESSION PROBLEM



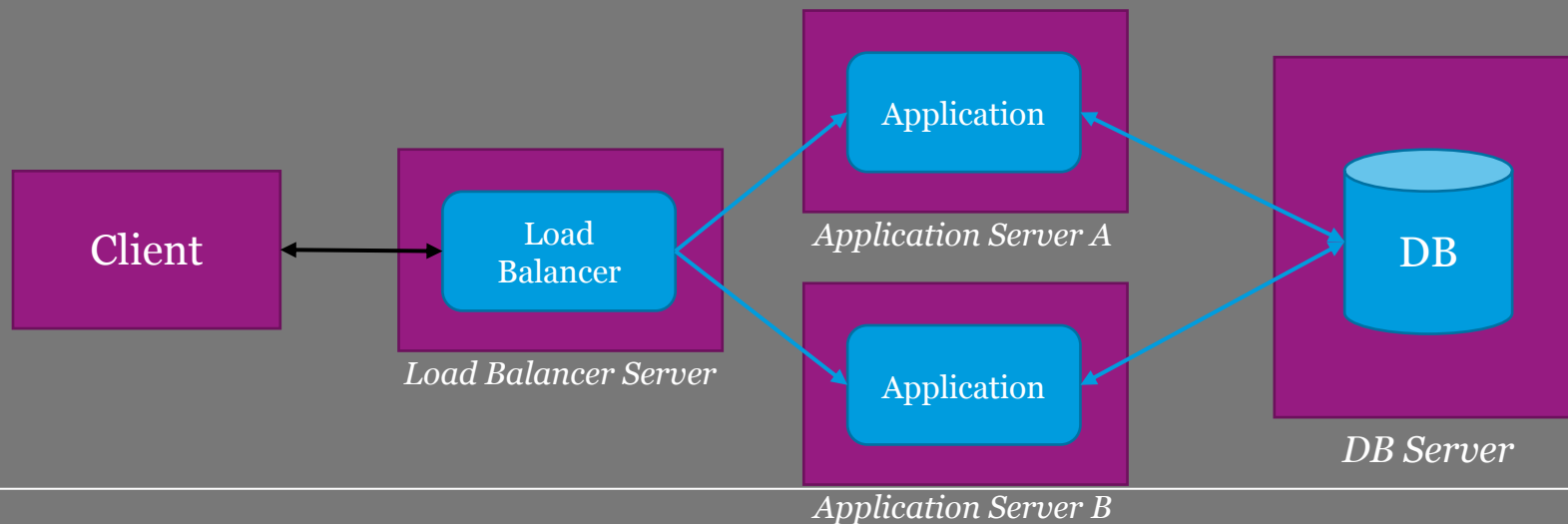
STORING SESSIONS IN THE DATABASE

- Benefits:
 - Easy from the Web App's point of view.
 - Easy from the Load Balancer's point of view.
- Drawbacks:
 - Increases the load on the database.
 - Increases the response time.



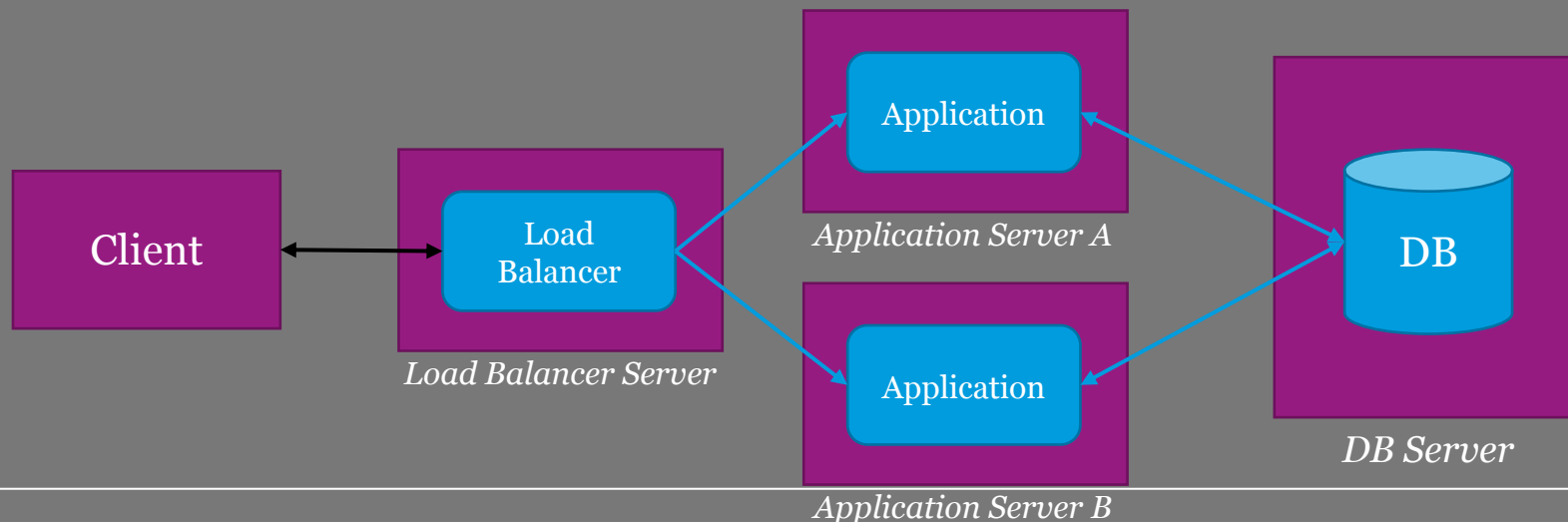
STICKY SESSIONS

- Benefits:
 - Easy from the Web App's point of view.
- Drawbacks:
 - Harder to scale.



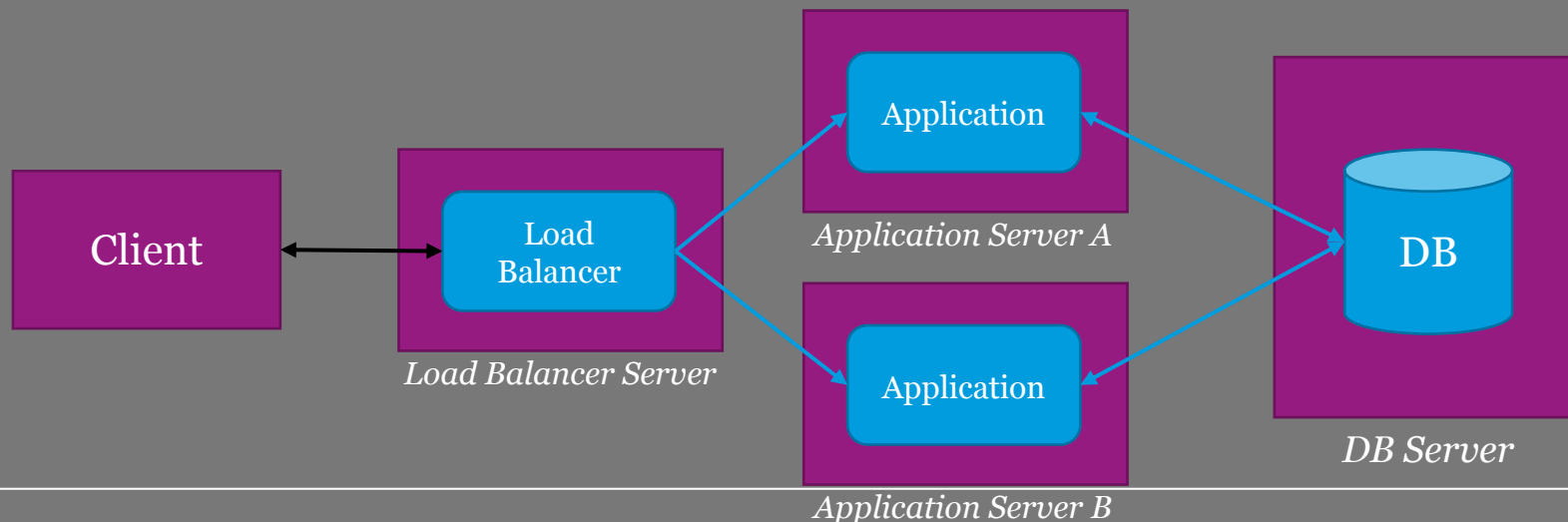
STORING SESSIONS IN COOKIES

- Benefits:
 - Easy from the Load Balancer's point of view.
- Secured? Can't client change the session data?
 - Server sends back sessionData and hash(sessionData + secret)



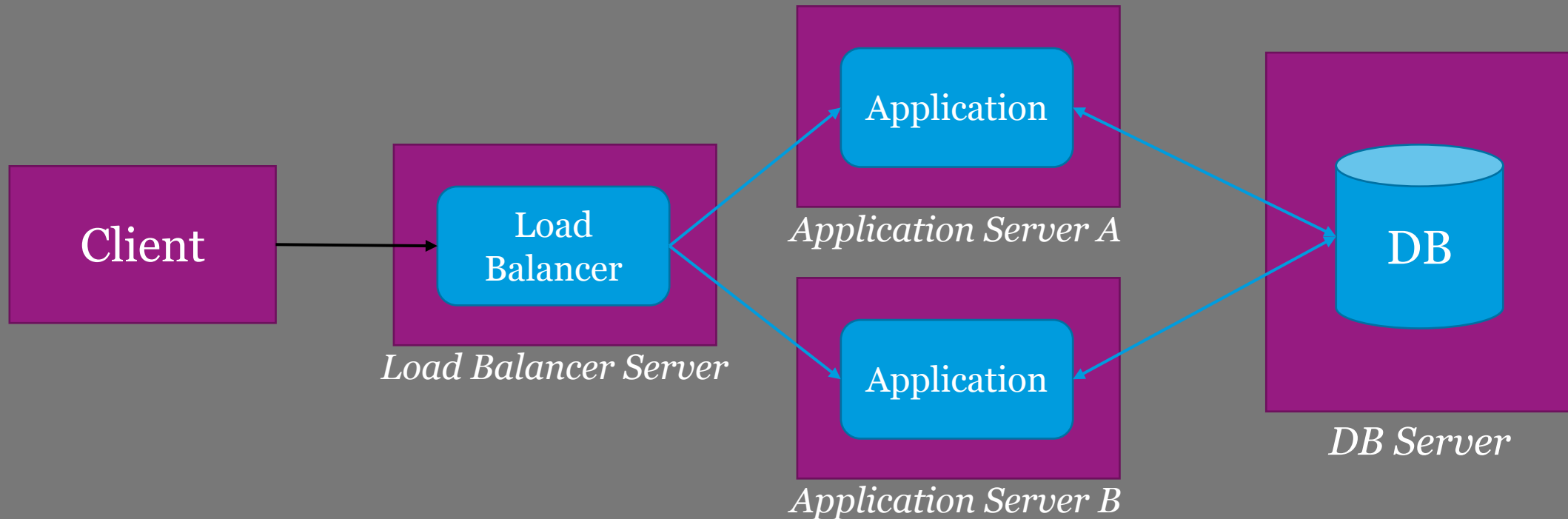
STORING SESSIONS IN COOKIES

- Drawbacks:
 - Harder to implement for the web application.
 - Additional network traffic.



CREATING SCALABLE SOLUTIONS

Use the *single responsibility principle*.



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Use the *single responsibility principle*.

